

The organic matter of the different ages fallow Luvisols

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Abstract

© Published under licence by IOP Publishing Ltd. The study of the change in the humus state of the fallow Luvisols of different ages under the influence of weeds and meadow vegetation was carried out in dynamics (after 5 years). It is shown that both under weedy and meadow vegetation there is a statistically significant accumulation of organic matter in the upper part of the long-arable horizon. Based on the study of composition and spectral properties of soil organic matter in fallow soils of different ages concluded that the significant qualitative change of the humus state of fallow soils requires significant time, measured at least decades.

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References

- [1] Lyuri D I, Goryachkin S V, Karavaeva N A, Denisenko E A and Nefedova T G 2010 Dynamics of Agricultural lands of Russia in XX century and Postagrogenic Restoration of vegetation and soils (Moscow: GEOS) 416
- [2] Kurganova I N, Lopes de Gerenyu V O, Shvidenko A Z and Sapozhnikov P M 2010 Change in the organic carbon pool of abandoned soils in Russia (1990-2004) Eurasian Soil Science 43 333-340
- [3] ISO 11277:1998 Soil quality - Determination of practice size distribution in mineral soil material - Method by sieving and sedimentation (Switzerland: Int. Organ. Stand)
- [4] Pansu M and Gautheyrou J 2006 Handbook of soil analysis. Mineralogical, organic and inorganic methods (Berlin, Heidelberg: Springer-Verlag)
- [5] Hyeong K and Capuano R M 2000 The effect of organic matter and the H₂O₂ organic-matter-removal method on the δ D of smectite-rich samples Geochim. Cosmochim. Acta. 64 3827-3829
- [6] Giniyatullin K G, Shinkarev A A Jr., Shinkarev A A, Krinari G A, Lygina T Z, Gubaidullina A M, Kornilova A G and Melnikov L V 2012 Irreversible fixation of organic components in labile inter-spaces as a mechanism for the chemical stabilization of clay-organic structures Eurasian Soil Science 45 1068-1080
- [7] Smith A L 1982 Applied Infrared Spectroscopy (London: John Wiley and Sons)
- [8] Giniyatullin K G, Shinkarev A A, Fazylova A G, Kuzmina K I and Shinkarev A A Jr 2012 Spatial Heterogeneity of Secondary Humus-Accumulation in Old-Arable Horizons of Fallow Light-Grey Forest Soils Uchenye Zapiski Kazanskogo Universiteta. Seriya Estestvennye Nauki. 154 61-70